**AMENDMENTS TO THE CLAIMS**

Claims 1-20 (*Cancelled*)

21. (*Currently amended*) A method for inhibiting the formation of clathrate hydrates in a fluid having hydrate-forming constituents, the method comprising contacting the fluid with an effective amount of a clathrate hydrate inhibitor having a polymer blend of a low molecular weight polymer component and a high molecular weight polymer component, wherein the high-molecular weight component and the low-molecular weight component are of the same polymer, the blend has a bimodal molecular weight distribution, the low molecular weight polymer component contains polymer having a weight average molecular weight of between 500 and 10,000, the high molecular weight polymer component contains polymer having a weight average molecular weight of between 10,000 and 6,000,000, and the ratio of low molecular weight component to high molecular weight component is from 20:1 to 1:1.

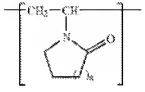
22. A method for preparing a hydrate inhibitor by blending a high molecular weight polymer component with a low molecular weight polymer component, wherein the high-molecular weight component and the low-molecular weight component are of the same polymer.

23. The method of claim 22 wherein the low molecular weight polymer component contains polymer having a weight average molecular weight of between 500 and 10,000, the high molecular weight polymer component contains polymer having a weight average molecular weight of between 10,000 and 6,000,000, and the ratio of low molecular weight polymer component to high molecular weight polymer component is from 20:1 to 1:1.

Claims 24-25 (*Cancelled*)

26. (*New*) A method for inhibiting the formation of clathrate hydrates in a fluid having hydrate-forming constituents, comprising:

contacting the fluid with an effective amount of a hydrate inhibitor comprising a substantially water-soluble polymer having a bimodal molecular weight distribution, wherein the polymer is an N-vinyl lactam having the following general formula:



wherein "n" ranges from one to three.

27. (*New*) The method of claim 26 wherein the polymer is a blend of a high-molecular weight component and a low-molecular weight component of the same polymer.

28. (*New*) The method of claim 26 wherein the polymer is polymerized as a bimodal polymer.

29. (*New*) The method of claim 27 wherein the ratio of low molecular weight polymer component to high molecular weight polymer component is from 20:1 to 1:1.

30. (*New*) The method of claim 29 wherein the ratio of low molecular weight polymer component to high molecular weight polymer component is from about 15:1 to about 1:1.

31. (*New*) The method of claim 26 wherein the polymer is mixed with a carrier solvent prior to treating the fluid, and wherein the carrier solvent is selected from the group consisting of water, brine, sea water, produced water, methanol, ethanol, propanol, isopropanol, glycol, and mixtures thereof.

32. (*New*) The method of claim 26 wherein the inhibitor is provided in an aqueous solution, and the fluid is a petroleum fluid.

33. (*New*) The method of claim 26 wherein the inhibitor is present in the fluid at a concentration of from 0.01 wt% to 0.5 wt% of the water present in the fluid.

34. (*New*) The method of claim 26 wherein the polymer is an N-vinyl caprolactam.

35. (*New*) The method of claim 34 wherein the N-vinyl caprolactam polymer contains 60 mass % to 95 mass % low molecular weight polymer with a weight average molecular weight of between 500 and 10,000, and 5 mass % to 40 mass % of high molecular weight polymer having a weight average molecular weight of between 10,000 and 6,000,000, and the bimodal polymer exhibits a minimum point on its molecular weight mass distribution curve between 5,000 and 100,000 weight average molecular weight.

36. (*New*) The method of claim 35, wherein the ratio of low molecular weight polymer component to high molecular weight polymer component is from about 12:1 to about 6:1.

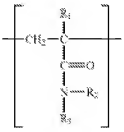
37. (*New*) The method of claim 26, wherein said polymer exhibits two or more minimum points between three or more peaks on said polymer's molecular weight distribution curve.

38. (*New*) The method of claim 37, wherein said polymer exhibits only a single minimum point between only two peaks on said polymer's molecular weight distribution curve.

39. (*New*) The method of claim 37 wherein said polymer exhibits only two minimum points between only three peaks on said polymer's molecular weight distribution curve.

40. (*New*) A method for inhibiting the formation of clathrate hydrates in a fluid having hydrate-forming constituents, comprising:

contacting the fluid with an effective amount of a hydrate inhibitor comprising a substantially water-soluble polymer having a bimodal molecular weight distribution, wherein the polymer is an acrylamide or methacrylamide of the formula:



wherein,

$R_1$ is selected from the group consisting of hydrogen and a methyl group;

$R_2$ is a hydrocarbon group having one to ten carbon atoms, and zero to four heteroatoms selected from the group consisting of nitrogen, oxygen, sulfur, and combinations thereof; and

$R_3$ is a hydrogen atom or a hydrocarbon group having one to ten carbon atoms, and zero to four heteroatoms selected from the group consisting of nitrogen, oxygen, sulfur, and combinations thereof.

41. (*New*) The method of claim 40, wherein $R_2$ and $R_3$ have a sum total of carbon atoms greater than or equal to one, but less than eight.

42. (*New*) The method of claim 41, wherein $R_2$ and $R_3$ carbon atoms are selected from the group consisting of branched, normal, and cyclic.

43. (*New*) The method of claim 42, wherein $R_2$ is selected from the group consisting of an alkyl, cycloalkyl, and an aryl group; and

$R_3$ is selected from the group consisting of hydrogen, an alkyl, cycloalkyl, and an aryl group.

44. (*New*) The method of claim 40, wherein the polymer is a blend of a high-molecular weight component and a low-molecular weight component of the same polymer.

45. (*New*) The method of claim 40, wherein the polymer is polymerized as a bimodal polymer.

46. (*New*) The method of claim 40, wherein the ratio of low molecular weight polymer component to high molecular weight polymer component is from 20:1 to 1:1.

47. (*New*) The method of claim 46, wherein the ratio of low molecular weight polymer component to high molecular weight polymer component is from about 15:1 to about 1:1.

48. (*New*) The method of claim 40, wherein the polymer is mixed with a carrier solvent prior to treating the fluid, and wherein the carrier solvent is selected from the group consisting of water, brine, sea water, produced water, methanol, ethanol, propanol, isopropanol, glycol, and mixtures thereof.

49. (*New*) The method of claim 40, wherein the inhibitor is provided in an aqueous solution, and the fluid is a petroleum fluid.

50. (*New*) The method of claim 40, wherein the inhibitor is present in the fluid at a concentration of from 0.01 wt% to 0.5 wt% of the water present in the fluid.

51. (*New*) The method of claim 40, wherein the polymer is selected from the group consisting of isopropylacrylamide, methacryloylpyrrolidine, and N-isopropyl methacrylamide (IPMA).

52. (*New*) The method of claim 40, wherein the polymer is an N-isopropyl methacrylamide.

53. (*New*) The method of claim 52, wherein the N-isopropyl methacrylamide polymer contains 75 mass % to 95 mass % low molecular weight polymer with a weight average molecular weight of between 500 and 10,000, and 5 mass % to 25 mass % of high molecular weight polymer having a weight average molecular weight of between 10,000 and 6,000,000, and the bimodal polymer exhibits a minimum point on its molecular weight mass distribution curve between 5,000 and 100,000 weight average molecular weight.

54. (*New*) The method of claim 53, wherein the ratio of low molecular weight polymer component to high molecular weight polymer component is from about 12:1 to about 6:1.

55. (*New*) The method of claim 40, wherein said polymer exhibits two or more minimum points between three or more peaks on said polymer's molecular weight distribution curve.

56. (*New*) The method of claim 55, wherein said polymer exhibits only a single minimum point between only two peaks on said polymer's molecular weight distribution curve.

57. (*New*) The method of claim 55, wherein said polymer exhibits only two minimum points between only three peaks on said polymer's molecular weight distribution curve.